SUPPORT FOR THE AMENDMENTS

The amendments submitted above are supported by the specification, in particular by paragraph [0026] of the specification. Accordingly, no new matter is believed to have been added to the present application by the amendments submitted above.

REMARKS

Claims 2, 10, 11 and 13-16 are pending. Favorable reconsideration is respectfully requested.

The present invention relates to a modified polyolefin resin, which is obtained by graft modifying a propylene-based random copolymer having a melting point of 50 to 90°C obtained by polymerization in the presence of a metallocene catalyst, with an unsaturated carboxylic acid and/or its derivative and with a (meth)acrylic acid ester, and which has a weight average molecular weight of 15,000 to 200,000, a graft weight of the unsaturated carboxylic acid and/or its derivative being in the range of 0.1 to 20% by weight, a graft weight of the (meth)acrylic acid ester being in the range of 0.1 to 30% by weight,

where the propylene-based random copolymer is a copolymer of propylene and another α-olefin selected from the group consisting of ethylene, 1-butene, 1-hexene, 4-methyl-1-pentene, and 1-octene.

See Claim 2.

The rejection of Claim 17 under 35 U.S.C. §102(b) is believed to be moot in view of the cancelation of that claim. Accordingly, withdrawal of this ground of rejection is respectfully requested.

The rejection of the claims under 35 U.S.C. §103(a) over Usui in combination with Komoto and Mitsui is respectfully traversed. The cited references fail to suggest the claimed modified polyolefin resin.

Usui does not disclose a metallocene catalyst. Komoto does disclose a metallocene catalyst, but the reference fails to disclose other features of the present invention.

The binder resin of Komoto is a chlorinated resin. According to the Applicants, the behavior of a chlorinated resin is very different from non-chlorinated resin. Therefore, even if Komoto discloses that chlorinated resin polymerized using metallocene catalyst has good

properties, one skilled in the art would not predict that a non-chlorinated resin polymerized using metallocene catalyst has the same properties.

The pending claims specify a copolymer of propylene and another α-olefin selected from the group consisting of ethylene, 1-butene, 1-hexene, 4-methyl-1-pentene, and 1-octene, which is a non-chlorinated copolymer. Important features of the present invention are:

(A) The claimed modified polyolefin resin is obtained by graft modification of a specific propylene based random copolymer.

(B) The random copolymer has a melting point of 50 to 90°C.

(C) The random copolymer is obtained by polymerization of monomers in the presence of a metallocene catalyst,

(D) The claimed resin has a weight average molecular weight of 15,000 to 200,000.

(E) The graft modification of the random copolymer is effected with both (i) an unsaturated carboxylic acid and/or its derivative and (ii) a (meth)acrylic acid eater, each of which is in the claimed resin in a specific amount.

(F) The random copolymer is a monomer of propylene and ethylene.

By virtue of having the feature (C), which is not disclosed in Usui and Mitsui, the present invention results in not only good adhesion properties but also good gasoline resistance, gasohol resistance and water resistance, when compared to Usui and Mitsui. These properties are desirable as a primer or paint use.

However, the Examiner argues that the present invention is obvious over Usui as modified in view of Komoto, since Komoto discloses the feature (C). Applicants disagree, because it would not have been obvious for a person skilled in the art to modify Usui on the feature (C) in view of Komoto.

In addition to the absence of the feature (E), the product of Komoto also lacks the feature (F). That is, the product Komoto is chlorinated before or after graft modification, and

therefore the random copolymer in the resin composition of Komoto is a chlorinated copolymer. Therefore, the product of Komoto is a chlorinated resin, and therefore the product of Komoto is different from a grafted copolymer of propylene and ethylene (feature (F).

The behavior of a chlorinated resin is very different from non-chlorinated resin, and therefore even if Komoto discloses that chlorinated resin polymerized using metallocene catalyst has good properties, one skilled in the art cannot predict that non-chlorinated resin polymerized using metallocene catalyst has the same properties.

As described in paragraph [0004] of the present specification, recently the use of chlorinated resin products has been avoided in order not to cause environmental problems. Among a large number of strategies which have been developed for improving properties of chlorinated resins, a person skilled in the art cannot predict which strategy would also be effective for the non-chlorinate resins. Therefore, it is not obvious for a person skilled in the art to pick the use of the metallocene catalyst in Komoto among such a large number of possibilities as an effective strategy for modifying the non-chlorinated resin product of Usui, in order to arrive at the present invention.

In view of the foregoing, the combination of Usui et al. and Komoto et al. fails to suggest the claimed modified polyolefin resin. Accordingly, the subject matter of the pending claims is not obvious over those references. Withdrawal of this ground of rejection is respectfully requested.

The rejection of the claims under 35 U.S.C. §112, second paragraph, is believed to be obviated by the amendment submitted above. "Obtainable" has been replaced by --obtained--.

In view of the foregoing, the claims are definite within the meaning of 35 U.S.C. §112, second paragraph. Withdrawal of this ground of rejection is respectfully requested.

Applicants submit that the present application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

James J. Kelly, Ph.D.
Attorney of Record
Registration No. 41,504

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/03)